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# Bangladesh-India Water Sharing: An Inequitable Flow

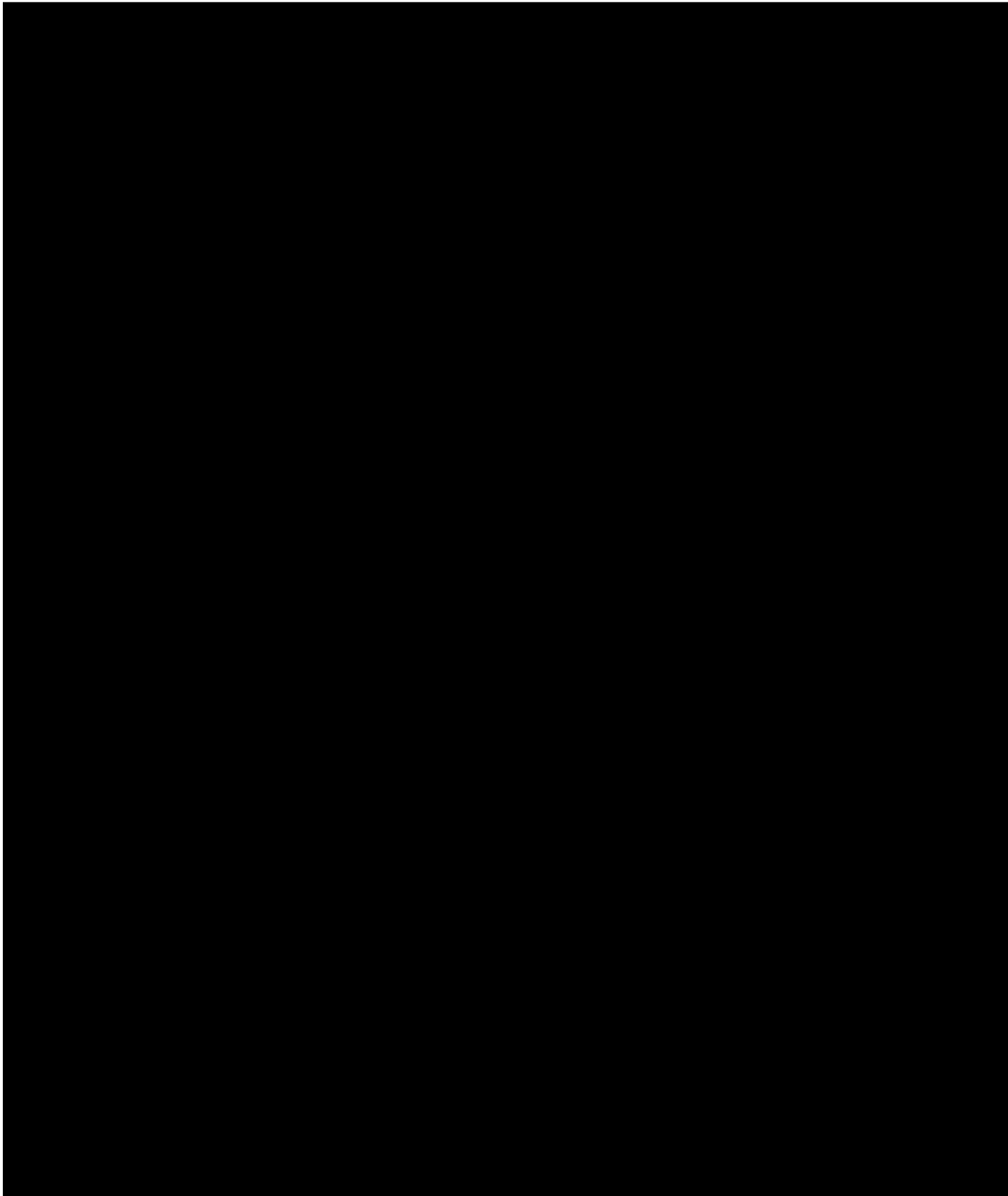
An Intelligence Assessment

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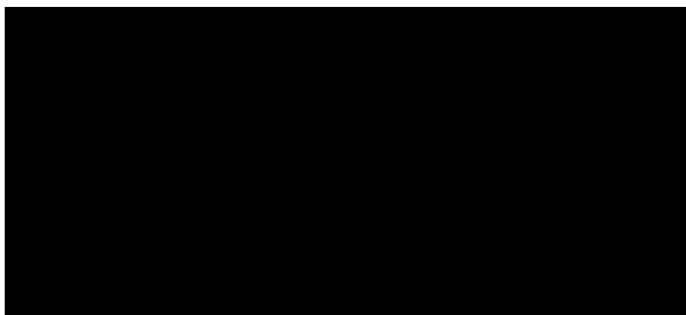


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**Bangladesh-India  
Water Sharing:  
An Inequitable Flow**

**Key Judgments**

Water sharing, a longstanding controversy in the Indian subcontinent, is likely to be the most pressing regional economic issue over the next two decades, given the ever increasing need for developing irrigation to help feed a booming population. The water issue is particularly acute for Bangladesh because India is increasing its upstream use of Ganges river water and also has the power to divert the flow of the Ganges river at the Farakka Barrage. Bangladesh, for which the potential human and political impact of this issue is great, must depend on Indian good will to reach an equitable solution to the problem.

Notwithstanding the immense technical problems in the management of the region's water resources, political differences are the major obstacle to resolving the long-term water sharing dispute. Bangladesh's suspicions that India seeks to reduce Dhaka's sovereignty and India's preoccupation with maintaining its predominance in the subcontinent tend to work against bilateral cooperation and a political compromise.

The two sides hold sharply divergent views on augmenting the Ganges' flow. India, with the dominant political and economic leverage, will continue to press its controversial proposal for a canal linking the Ganges and Brahmaputra rivers over Bangladesh's counterproposal for a series of storage dams along the tributaries of the Ganges river in Nepal. Both sides, however, agreed in October 1982 to extend current water sharing arrangements for an additional 18 months.

In our view, Chief Martial Law Administrator Ershad's willingness to study New Delhi's link canal proposal in return for the interim agreement and minor Indian concessions has increased the political risks to his leadership. His unsteady hold on power cannot survive further perceptions of caving in to Indian pressure. Ershad does not appear to have prepared a strategy to soften his constituents' opposition to the canal—particularly among the military—and he has few, if any, options but to deal cooperatively with his far stronger neighbor on the water sharing issue.

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Bangladesh has in the past and again could appeal for US support in its water sharing dispute, despite India's refusal of outside participation. A severe drought in either country, which could upset the already delicate water sharing balance, or a complete breakdown in the negotiations, which would leave Bangladesh even more vulnerable to Indian domination of the issue, could prompt such action by the government in Dhaka. Although the United States has avoided becoming directly involved in the issue, US policy concerns, besides humanitarian, are keyed to maintaining the political and economic stability of this highly populated region. [REDACTED]

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**Bangladesh-India  
Water Sharing:  
An Inequitable Flow** [REDACTED]

Seasonal water shortages and floods are chronic in Bangladesh, and the overpopulated, largely agrarian society depends heavily on the Ganges and Brahmaputra rivers, which flow through the country. Because both rivers enter Bangladesh from India, their technical management and control is made particularly difficult for Bangladesh by adding a sensitive political dimension; India already has the power to divert the flow of the Ganges away from Bangladesh at the Farakka Barrage. Hence, water sharing is a major point of controversy between the two neighbors and a potential source of regional instability. This paper examines the water sharing issue primarily from the viewpoint of Bangladesh, which has the least political leverage and fewest negotiating options and whose persistently unstable economy is the most vulnerable. [REDACTED]

US policy interests in the water sharing issue between Bangladesh and India are keyed to humanitarian concerns and to preserving the political and economic stability of a region that houses a substantial portion of the world's poor. For instance, an economic disaster in Bangladesh brought about by a severe drought or a political change in the delicate water sharing balance could send a tide of refugees into India and destabilize that already overpopulated country. In spite of Bangladesh's appeals for US involvement, the United States has chosen not to become directly involved in the politically sensitive issue, insisting that the problems of the area can best be solved without outside interference. [REDACTED]

**Background**

The equitable distribution of the waters of the Ganges and Brahmaputra river systems has been a major [REDACTED]

point of controversy since 1947, when the mutual suspicions of India and Pakistan were the primary stumblingblock to harnessing the waters. Prior to the partition of India and Pakistan in 1947, little was done to manage the waters of the eastern region, while the western side of the subcontinent had a complex, working irrigation system. India's proposal in 1961 to build a dam on the Ganges at Farakka in West Bengal undoubtedly reinforced Pakistan's fears and aggravated the dispute [REDACTED]

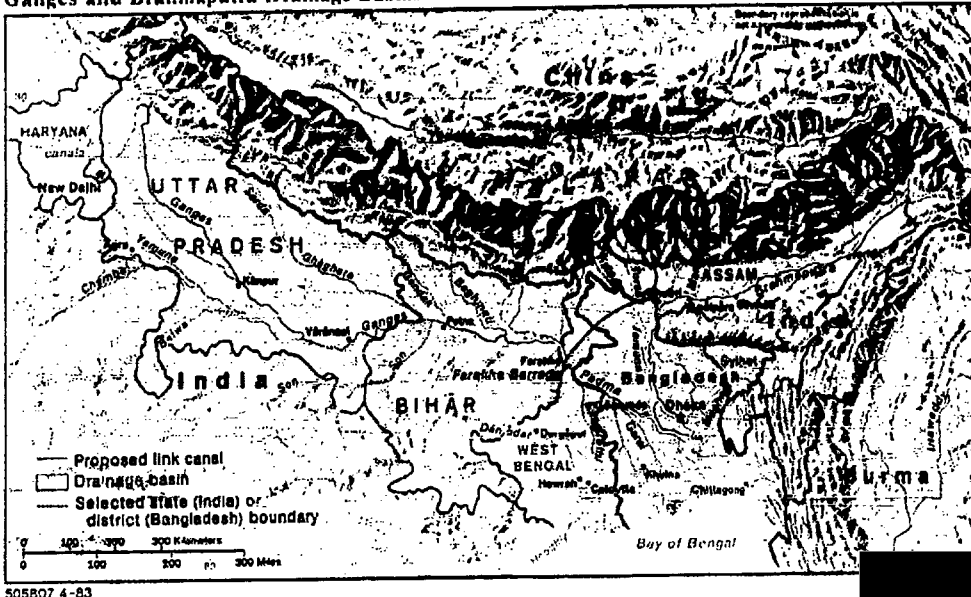
Following the emergence of Bangladesh in 1971, the climate of cooperation seemingly improved, given India's support for Bangladesh independence. In 1972 Indian Prime Minister Gandhi and Bangladesh President Sheikh Mujib established a Joint Rivers Commission as a vehicle for formal negotiations. Although the Commission continues to handle bilateral water-related issues, such as its most recent task to discuss prefeasibility studies for augmenting the dry season flow of the Ganges and to complete arrangements on sharing the flow of the Teesta River—a Brahmaputra tributary—its effectiveness has been curtailed by political problems. Bangladesh's suspicions that India continually seeks to diminish Dhaka's sovereignty and India's preoccupation with maintaining its predominance in the subcontinent work against bilateral cooperation and compromise [REDACTED]

The water sharing dispute intensified in 1975 when India began operation of the controversial Farakka Barrage, ignoring complaints from Bangladesh. The barrage is 18 kilometers upstream from Bangladesh's northwestern border and diverts part of the Ganges River that would normally flow through Bangladesh to a channel wholly within India to flush silt from Calcutta Port. [REDACTED]

In 1977 under the more flexible political atmosphere of India's Janata government, Bangladesh and India signed a five-year agreement governing sharing of the [REDACTED]

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Figure 1  
Ganges and Brahmaputra Drainage Basins



Ganges at the Farakka Barrage. India agreed to a division of dry season waters so that two-thirds went to Bangladesh and one-third to India. The agreement also called for the preparation of long-range augmentation studies which

India perceived as agreement by Bangladesh to eventually permit study of a link canal between the Ganges and Brahmaputra

Prime Minister Gandhi's return to power in January 1980 signaled a more rigid Indian position regarding the water sharing problem, however, as Gandhi had criticized the Janata government for allowing itself to be "bullied" by India's smaller neighbors

India's insistence on dominating regional relations has prevented a multilateral solution to the water sharing problem favored by Bangladesh and Nepal. For several years, Bangladesh has advocated including Nepal in discussions with India, but this has been consistently vetoed by New Delhi, which insists on treating the

water sharing issue with each neighbor separately. India believes, in our view, quite rightly, that a cooperative approach could divert some benefits India wishes for itself and dilute its regional supremacy

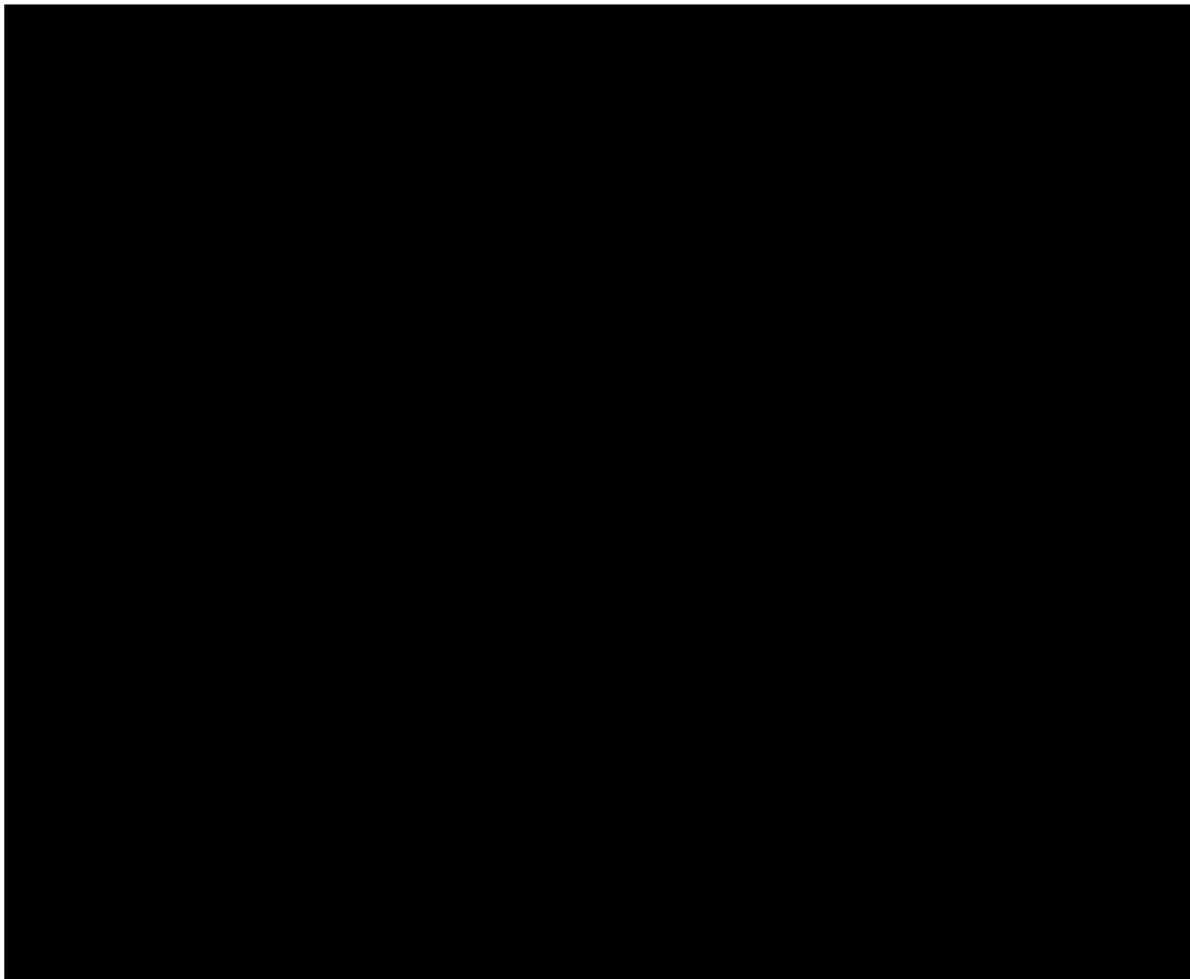
#### Mastering the Waters: Technical and Economic Considerations

No comprehensive technical survey of possible approaches to developing the Ganges-Brahmaputra rivers has been performed, although international experts agree that harnessing the rivers would require monumental scientific and engineering efforts. An ideal program must ensure that local projects would not impair the future development of a regional water system.

The urgent problem is regulating the waters of the Ganges, which has too little and of the Brahmaputra, which has too much. During the lean season from February to May, the water level of the Ganges is

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insufficient to meet the growing needs of both Bangladesh and India. On the other hand, the major problem with the Brahmaputra is annual flooding, which coincides with the Ganges' high water level during August and September and causes considerable loss of life and damage to property (see figure 3)

Silting, shoaling, and salinity complicate an already difficult situation. While the silting restores agricultural land, it also increases the problem of flooding on both rivers by reducing river depths and causing channels to shift. Further, heavy silt deposits at the

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### The Ganges: River Data

There is too little water in the Ganges to fully satisfy the needs of an increasing population. About 3.6 million hectares of land in the Ganges basin are dependent on Ganges water. Before the opening of the Farakka Barrage in 1975, Bangladesh received the entire downstream flow of the river. Rising in the Himalayas and flowing generally eastward, the Ganges enters Bangladesh 18 kilometers below the Farakka Barrage, joins the Brahmaputra at Goalundo in central Bangladesh, and then meets the Meghna, where the combined flows of the three rivers empty into the Bay of Bengal.

Glacial snow melts from the Himalayas, which raises the downstream levels of the Ganges from late May to early June, and runoff from the monsoon rains of July to September comprise the high water season and 80 percent of the river's total annual flow. The rate of flow during this peak period is about 3.3 million cubic feet per second (cusecs) but is usually reduced to 50,000 to 60,000 cusecs during the critical dry months of March and April.

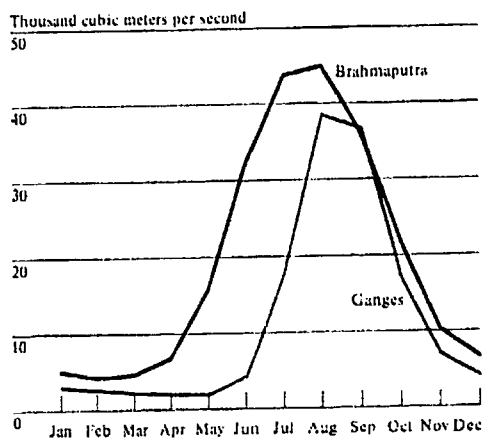
\* For additional geographic data, see CIA Research Paper, GC 77-10047, (Unclassified), March 1977. Background to the Ganges Water Dispute Between India and Bangladesh

mouth of the Ganges interfere with Bangladesh's vital river communications network

Bangladesh also claims that the continued dry season withdrawal of Ganges water from the Farakka Barrage has increased sedimentation and shoaling so much that a major irrigation project at the junction of the Ganges and Brahmaputra has had to nearly cease operation.<sup>1</sup> To the west, the Indian port of Calcutta is being increasingly affected by the silting of the Hooghly river, a Ganges tributary.

<sup>1</sup> Although the project has not worked well from its inception, Bangladesh claims, that dry-season withdrawal of Ganges water from the Farakka Barrage has contributed to its failure.

Figure 3  
Average Monthly Inflow of Brahmaputra and Ganges Rivers



Source: Based on 1977 World Bank statistics.

Bangladesh charges that the decreased flow of the lower Ganges during the dry season decreases the availability of water for drinking and irrigation and causes damage to crops, fishing, and forestry. When the Farakka Barrage began operating in 1975, Bangladesh claimed in official reports to have lost large areas of cropland from increased salinity due to the northward encroachment of salt water tides from the Bay of Bengal. World Bank and other international experts disagree, however, about whether this effect is due to the Farakka Barrage or to normal river shifts.

### Disagreement Over a Solution

India and Bangladesh are far apart on their approach to the long-term problem of increasing the supply of usable water. Because Bangladesh is too flat for major dams, India favors construction of a link canal connecting the Brahmaputra with the Ganges to augment the Ganges' dry season flow. Dhaka opposes this

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### **Indian-Bangladesh Proposals for Water Management**

#### **Brahmaputra-Ganges Link Canal**

As part of an ambitious plan to satisfy its long-term water needs, India favors a canal to link the Brahmaputra and Ganges rivers. The canal would be constructed from the Indian city of Dhubri, situated on the Brahmaputra, across northwestern Bangladesh to a point on the Ganges just above the Farakka Barrage. Depending on the precise route selected, the canal would be some 290 to 320 kilometers long. The Indian proposal also considers construction of large storage dams on tributaries of the Brahmaputra (the Dihang, Subansiri, and Barak rivers) as well as the building of a barrage at Goalpara above Dhubri.

To support its proposal, New Delhi claims in the Indian press that at least 2 million hectares in Bangladesh would benefit from flood relief and that construction of the storage dams would protect an equally large area in Bangladesh's northeastern district of Sylhet, where nearly 82 percent of the land is flooded every year. The Indians further argue their scheme would enable use of the virtually unexploited Brahmaputra, which begins rising in February, to supplement the Ganges lean period flow in March and April. New Delhi claims that, given the current underutilization of the Brahmaputra and its annual flooding, exploitation of the Brahmaputra would not deprive Bangladesh of water required for other purposes, such as irrigation and drinking.

Bangladesh opposes the link canal proposal, arguing, [redacted] that it would displace 200,000 people in an already overcrowded country; would involve considerable expense and

substantial loss of cultivable land in Bangladesh; and would be energy inefficient if water has to be pumped uphill. More important, Bangladesh is unwilling to accept Indian control of the headworks at both ends of the proposed canal.

#### **Upstream Storage in Nepal**

[redacted] Bangladesh's counterproposal calls for the construction of 12 dams in Nepal to augment the dry season flow of the Ganges at Farakka by an additional 120,000 cusecs. The Bangladesh scheme calls for linking the proposed dams in Nepal, the outflow of which would serve all three countries. Coincidentally, this plan would benefit Nepal by providing a more direct water route for the transit of Nepalese goods.

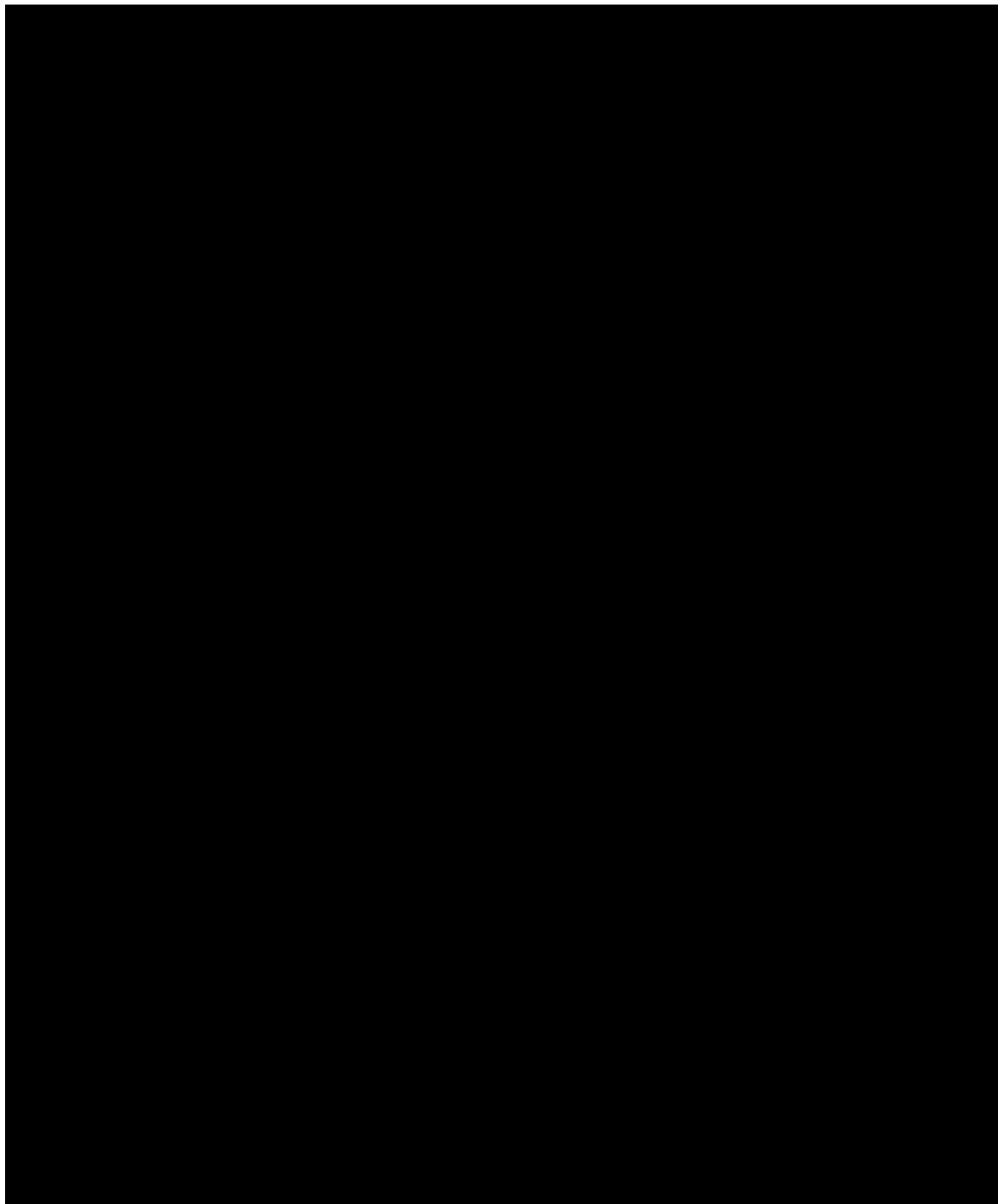
Bangladesh's proposal, however, ignores the problem with the Brahmaputra waters; like India's plan, it also ignores the problems of huge initial costs as well as the loss of agricultural land and population displacement, which the Nepalese probably would not sanction. Further, the Indians in their official studies doubt whether the Ganges has sufficient water for both users, even with the addition of upstream storage facilities, and question whether enough water would even reach the Farakka Barrage during the critical dry season, given high evaporation loss and increased use for irrigation in India. This plan would also require trilateral cooperation, which runs counter to India's regional political emphasis on bilateral agreements.

because it entails the loss of valuable agricultural land and the displacement of perhaps as many as 200,000 people and because, depending on the canal's location, India might still control the flow of water.

[redacted] Bangladeshis view the proposal as an Indian attempt to exploit Bangladesh's territory and increase Indian political dominance over Bangladesh. [redacted] India believes that since 1975 the Bangladesh Government has intentionally encouraged such popular views.

India rejects Dhaka's counterproposal for a system of storage reservoirs in Nepal, whose rivers, as Bangladesh points out, account for the bulk of the Ganges' flow during the dry season. Either approach would require immense expenditures lasting more than a decade.

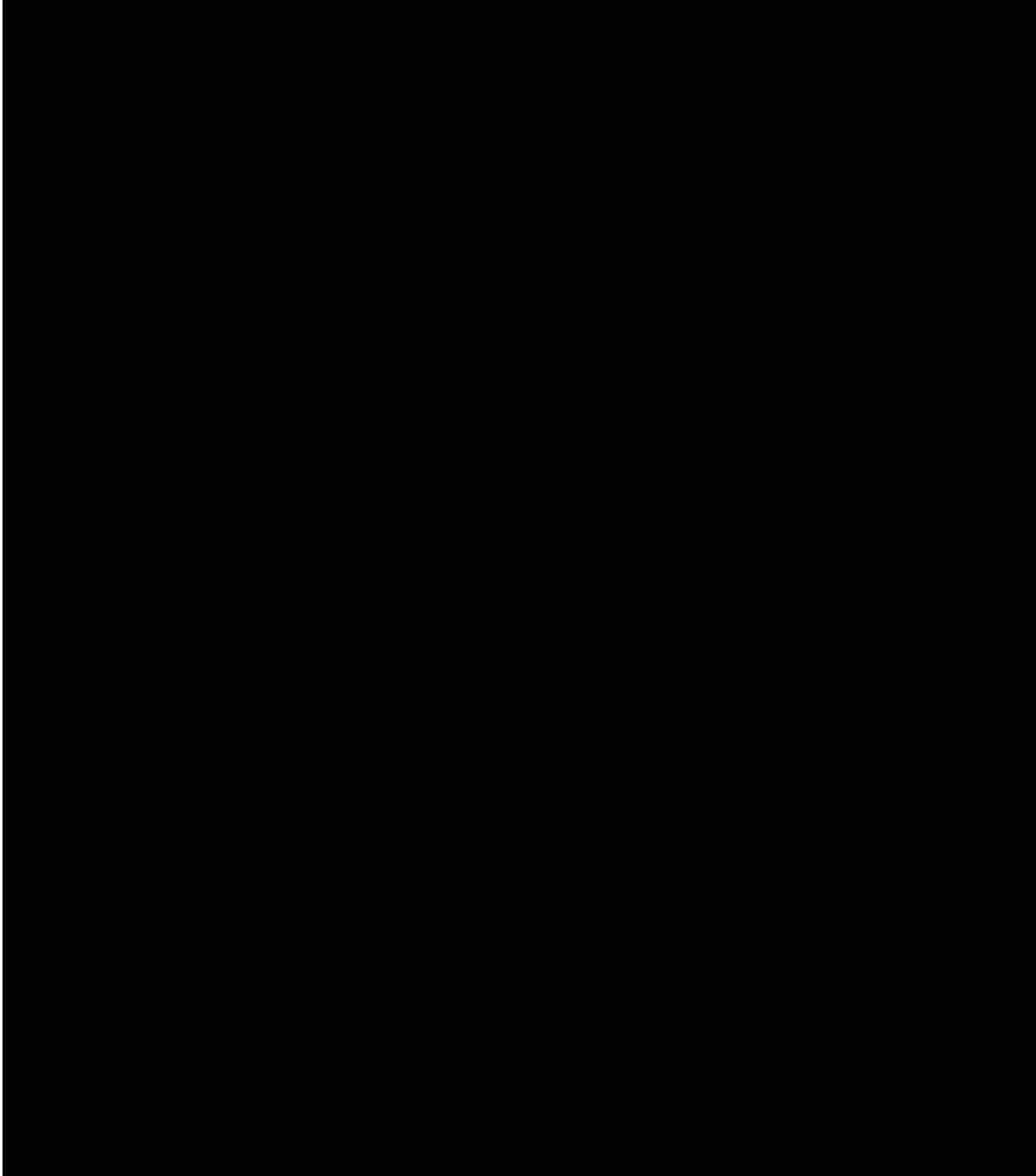
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#### Renewed Negotiations: The October Bangladesh-Indian Summit

In early October 1982, one month before the expiration of the Farakka agreement, Chief Martial Law Administrator Ershad and Prime Minister Gandhi met in New Delhi to discuss the issue of water sharing. [REDACTED] months of difficult negotiations at lower ministerial levels preceded the session. Despite India's stronger position at the negotiating table, Ershad appears to have made some temporary gains in the memorandum of understanding signed by the two leaders. Most important for Ershad is Gandhi's agreement to a new 18-month interim water sharing arrangement only moderately different from the previous one signed in 1977. Reassuringly for Ershad, this period will cover Bangladesh's next two dry seasons. Although the understanding did not include a key clause that formerly protected Bangladesh's share of water during the severest droughts, it was far more generous to Dhaka than we initially expected. [REDACTED]

[REDACTED]

Ershad, in return, had little choice, in our view, but to agree to a pref feasibility study of India's plan for the link canal between the Ganges and Brahmaputra rivers. Ershad was able to include in the pref feasibility studies Bangladesh's counterproposal to build storage dams in Nepal, although this may amount to little more than a face-saving measure for Ershad because New Delhi is likely to insist that the canal will prove the more feasible solution. [REDACTED]

[REDACTED] the Joint Rivers Commission, composed of representatives of both countries, will attempt to settle the problem of long-term augmentation of dry season water flow within the 18-month extension period—a process that will entail some tough bargaining. At the late December meeting of the Commission, [REDACTED] Bangladesh's Minister of Agriculture emphasized that the two sides had committed themselves to considering one another's proposals. Whether these remarks are more rhetorical than substantive is uncertain, as the Bangladesh position appears to have hardened since that meeting and a serious impasse has developed. [REDACTED] as Bangladesh faces the realities of negotiations. A prolonged stalemate could stifle the cooperation, which initially marked the first serious appraisal by Dhaka and New Delhi of possible long-range solutions. [REDACTED]

#### Political Implications

*For Bangladesh.* At present, Ershad does not appear to have formulated any strategy for dealing with the issue of water sharing once the 18-month period expires in April 1984. By agreeing to a study of the link canal, Ershad has upped the political ante on his unsteady leadership, as he cannot afford to be seen by his constituents, particularly his fellow generals, as caving in to Indian pressure. Conversely, he has few, if any, alternatives but to deal cooperatively with his

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stronger neighbor on the water sharing issue [REDACTED]

To forestall presummit opposition, Ershad declared that he would not "adopt a policy of submission even if the entire north Bengal turns into a desert."

Privately, however, in our judgment, he and his civilian advisers apparently realize that a tough stance would only harden India's position [REDACTED]

[REDACTED] a senior Bangladesh Ministry of Foreign Affairs official claims that Bangladesh intends to follow with "reasonable conscientiousness" an "objective" outcome from the augmentation studies. On the other hand, the officials say the government will do everything it can to resist the link canal, which India confidently expects to be the most feasible solution. [REDACTED]

[REDACTED]

Ershad, by including the storage canal proposal in the prefeasibility studies, apparently hopes that a multi-lateral cooperative approach can be found and that India will wish to make concessions to project a favorable international image. This may be the strongest point Bangladesh has on which to base its bargaining strategy [REDACTED]

*For India.* Although repercussions of the water sharing issue are more politically costly for Bangladesh than for India, Prime Minister Gandhi still must consider the political reactions and internal squabbles of several Indian states. [REDACTED]

reporting, former Indian Irrigation Minister Panday pledged last May that there would be no future arrangements with Bangladesh "at the cost of Calcutta port." Just prior to Ershad's visit, [REDACTED]

[REDACTED] Prime Minister Gandhi summoned West Bengal's Communist Chief Minister Jyoti Basu to New Delhi for consultation on the water sharing issue. West Bengalis, long concerned with the continuing silting problem in Calcutta's port areas and the shortage of irrigation water, want an additional 15,000 cusecs of Ganges water [REDACTED]

For now [REDACTED] the West Bengali response to the Ershad-Gandhi agreement is muted, given the state's poor financial condition and its dependence on loans and food grain allocations from the national government. Gandhi's failure to obtain the extra water, according to the same Consulate report, came as no surprise. Basu is avoiding a confrontation with Gandhi on as many fronts as possible and also wants to avoid assuming responsibility for the outcome of subsequent negotiations between Gandhi and Ershad. [REDACTED]

India also has increased upstream offtake to northern agricultural states and must consider future water requirements there while balancing the states' bickering over the amount each receives. For instance, in an article in the Indian publication *The Statesman*, the West Bengal irrigation minister in 1980 complained that the states of Bihar, Uttar Pradesh, and Haryana were drawing large quantities of Ganges water for agriculture and thereby reducing the downstream flow to West Bengal. [REDACTED]

#### Regional and International Implications

*Regional Cooperation.* Although India has insisted on a bilateral approach to the water sharing problem,

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Bangladesh would like to involve Nepal in the negotiations. [REDACTED] Bangladesh and Nepal favor a regional approach to cooperation on water issues because of the trilateral nature of the problem, and more important, the desire for each other's support against India. Although the Ganges itself does not flow through Nepal, many of its tributaries rise in the Himalayas on its northern border. Thus, the lack of a comprehensive program to harness the water leaves all three countries vulnerable to crop failure from insufficient rains or to devastating floods in years of strong monsoons. [REDACTED]

Nepal's position in dealing with India on water sharing is somewhat stronger than that of Bangladesh as India has more reason to treat Nepal favorably. As a potentially vulnerable lower riparian in its own right, India has an immense stake in controlling the waters flowing out of Nepal. Increased runoff caused by deforestation of Nepal's hills has greatly exacerbated flood damage on the Gangetic Plain in Nepal and India and has hampered the abilities of both countries to increase agricultural production. New Delhi is intent on reducing Nepal's leverage by insisting on joint control of Nepalese hydroelectric projects located on rivers that ultimately flow into India. [REDACTED]

Ershad visited Nepal in early November and, according to a generally reliable source, obtained firm support for Bangladesh's position on Ganges water sharing. For a period, the prospect for a simultaneous approach to Nepal by Bangladesh and India for participation in the prefeasibility studies appeared promising. [REDACTED] indicates India now views such action as too near to trilateralizing the issue. If true, India appears to be blocking Bangladesh's proposal to study the feasibility of storage dams in Nepal, which could force Bangladesh to reject India's reciprocal feasibility study on Bangladesh territory for a link canal. In the short term, Ershad could be relieved of the political pressure that permission to conduct such a study on Bangladesh soil would incur. If each side blocks the study of the other's proposal, however, the progress made last October for seeking a long-range solution will have broken down. [REDACTED]

*The International Factor.* At first Pakistan and subsequently Bangladesh have tried unsuccessfully to draw outside actors into the water sharing dispute, and we believe Bangladesh again may appeal for international involvement. India's hypersensitivity and resentment of external participation have muted international political and aid donor interest, although outside financing and expertise will be necessary to construct whatever project Bangladesh and India finally agree to. Although the idea of involving the World Bank was raised by Bangladesh as recently as 1978, the Bank presumably recognizes that outside initiatives would only stiffen India's intransigence and has stated officially that it would play a role only if both sides concurred. Even with mutual concurrence, outsiders may be reluctant to become involved, given the enormous technical problems and high political risk that the agreement may be short lived. [REDACTED]

The United States, the United Kingdom, and the USSR have had only passing involvement in the dispute. In 1977 a US Government interdepartmental group quietly undertook an internal review of the scope and potential of the region's water resources. The group concluded that US participation would be worthwhile but noted the regional political complications and the possible difficulties in getting Congressional and domestic public support for a large financial commitment. President Carter, during his visit to New Delhi in early 1978, offered US support when the regional states request such a study, but the Indians allowed this offer to pass without comment. Along with the United States, the United Kingdom has expressed its support for a study of long-term solutions to make the most effective use of water resources. Much earlier, in 1968, [REDACTED]

[REDACTED] the USSR offered to assist the Indians and Pakistanis in reaching agreement on the Farakka Barrage issue. The Indians rejected the proposal, partly in view of a Soviet offer to sell arms to Pakistan, and partly in keeping with India's negative attitude toward external involvement. As far as we know, the USSR has not repeated the offer. [REDACTED]

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[redacted] a more neutral proposal has been suggested, although the study does not indicate by whom, to create an international public corporation under the auspices of an organization such as the World Bank or the United Nations to oversee administrative and financial control of the project and thus eliminate the political infighting. The directorship of such a corporation could consist of international nominees, in addition to representatives from Bangladesh, India, and Nepal. In the development stage the corporation would manage the planning and financing; subsequently, it would operate facilities, receive revenues (from power sales and irrigation fees), and distribute dividends to the three countries according to a prescribed formula. India has not endorsed this approach and, we believe, probably will not change its stance. [redacted]

#### Outlook

With domestic opinion in both countries overstimulated by the water sharing issue, both Ershad and Gandhi will have to bear responsibility for any unpopular position if a major agreement is concluded. Nevertheless, Bangladesh has few, if any, options to weaken India's leverage and its push for the link canal. Bangladesh's ability to engage in long-term planning of its water requirements is hampered by its need to concentrate on the urgent short-term problem of depletion of low-season Ganges flows by the Farakka Barrage, its shortage of human and technical resources for planning, and the significant factor that upstream flows are out of its control. [redacted]

In our view, the limited extension of the water sharing agreement amounts to only a short reprieve for Ershad, by postponing briefly his need to make a tough decision on the complex problem. For the time being, India got what it wanted—a promise of serious consideration of the link canal; Ershad got what he needed—extra time to soften public opposition to the controversial project. The success of whatever strategy Ershad undertakes to deal with the problem will depend on his ability to consolidate and legitimize his political authority over the next year, particularly over other generals in the Martial Law Administration who represent a potent political threat. If the water sharing talks break down completely, India could accelerate pressure for the canal by withholding

another short-term extension once the 18-month period expires, although India probably would be reluctant to allow such an abrupt deterioration in relations between Dhaka and Delhi. India probably will not agree, however, to a new water sharing treaty without Bangladesh concessions on augmentation schemes. [redacted]

Although Nepal's participation would heighten Dhaka's political leverage and reduce Bangladesh's isolation, India is likely to continue to stifle Bangladesh's efforts to secure outside support until Dhaka agrees to a viable water sharing solution—which India perceives is the link canal. Without trilateral cooperation, however, water management projects will continue on a piecemeal basis. [redacted]

The realities of regional politics are such that the water sharing dispute is likely to continue to complicate bilateral relations between Bangladesh and India. Prime Minister Gandhi's narrow definition of those multilateral issues pertinent to India's interests and Bangladesh's inability to rise much above its domestic political instability to address external problems will be the major factors in prolonging the issue. Even if both countries can overcome the political hurdles, the technical, financial, and management problems in bringing about a long-term water augmentation program will command considerable Bangladesh-Indian attention for the remainder of this century. [redacted]

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